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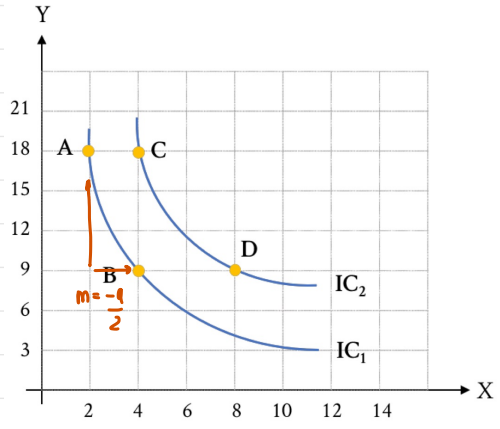
1.a) Belle income : $7 let ham(h) and cheese (c) P_h cost $1 and P_c cost $1

I	h,c	MUh	MUc	MU_h/P_h	MU_c/P_c	choice	remaining budget
	1	15	12	$\frac{15}{1}=15$	$\frac{12}{1}=12$	h_1	7-1 = 6
	2	11	9	$\frac{11}{1}=11$	$\frac{9}{1}=9$	C_1	6-1 = 5
	3	9	6	$\frac{9}{1}=9$	$\frac{6}{1}=6$	h_2	5-1 = 4
7	4	6	5	$\frac{6}{1}=6$	$\frac{5}{1}=5$	C_2	4-1 = 3
	5	4	3	4	3	h_3	3-1 = 2
	6	3	2	3	2	C_3	2-1 = 1
	7	1	1	1	1	h_4	1-1 = 0

To maximized utility, she should purchase 4 ham and 3 cheese.
By calculating, if she spent by this table she will spent all of money to get best utility.

1b) If she choose 3 cheese and 4 ham, she will get maximized utility by using all budget. But, if she choose othe point she will lose some utility and won't get maximized utility. Moreover, she will have to spent more money to get higher price and lose some benefit.

2a)



Measure point A to B (P_y is 10 baht per unit)

$$\frac{MU_x}{MU_y} = \frac{P_x}{P_y}$$

$$-\frac{P_x}{P_y} = \frac{\Delta y}{\Delta x}$$] slope

$$-\frac{P_x}{10} = -\frac{9}{2}$$

$$P_x = -\frac{9}{2} \cdot -10$$

$$P_x = 45$$

2b) Measure point A to B (P_x is 180 baht per unit)

$$\frac{MU_x}{MU_y} = \frac{P_x}{P_y}$$

$$\frac{-180}{P_y} = -\frac{9}{2}$$

$$-180 \cdot \frac{-2}{9} = P_y$$

$$40 = P_y$$

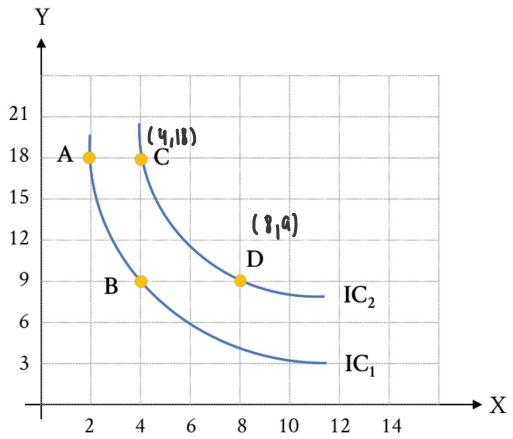
Budget

$$I = MU_x \cdot P_x + MU_y \cdot P_y$$

$$I = 2(180) + 9(40)$$

$$I = 720$$

2C)



Measure point C to d (find average marginal utility per unit of avocado)

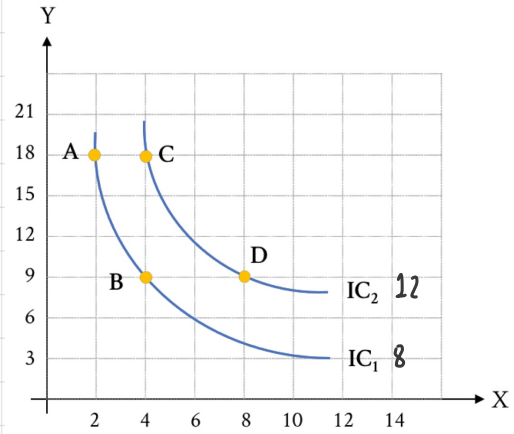
point C $(x,y) = (4,18)$	point D $(x,y) = (8,9)$
Point C have 4 avocado.	Point D have 8 avocado

So, increasing avocado from C to D is 4 avocado

Consumer yields 8 and 12 utils on IC_1 and IC_2

$$\frac{MU}{Q} = \frac{4 \text{ utils}}{4 \text{ utils}} = 1$$

2d)



Law of diminishing MU

At point A $U = 8$ $(X,y) = (2,18)$

At point C $U = 12$ $(X,y) = (4,18)$

From point A to C

$$MU = \frac{U_2 - U_1}{X_2 - X_1} = \frac{8-12}{2-4} = 2$$

From point B to D

$$MU = \frac{12-8}{8-4} = 1$$

So, when point A to C and point B to D, Marginal utility will decrease and make law of diminishing.